بسم الله الرحمن الرحيم

# THE COMPLETE CAST CROWN PREPARATION

BY

Dr: Manal Madina

**It is an all- metallic restorations that restores functional properties of the prepared tooth.**

# ADVANTAGES :

1- It has a greater retention than the more conservative restorations.

2- It has a greater resistance form than the partial coverage restorations.

3- The strength of the complete cast crown is superior to that of other restorations.

# ADVANTAGES :

4- It allow for modification of the axial tooth contour as in case of malaligned teeth.

5- It allow easy modification of the occlusion.

# DISADVANTAGES :

1- It is less conservative to the tooth structure.

2- It may cause inflammation of the gingival tissues.

3- It doesn't allow electric vitality test of the abutment tooth.

4- Display of metal make it restricted to maxillary molars , mandibular molars and premolars.

# INDICATIONS :

1- It is indicated whenever maximum retention and resistance are needed.

2- Correction of axial contours as in malaligned teeth.

3- It is used to support the removable partial denture.

4- It is indicated to on endodontically treated teeth.

# CONTRAINDICATION:

1- If the treatment objectives can be met with a more conservative restorations.

2- If less than maximum retention or resistance are needed.

3- If high esthetic are needed.

# PREPARATION

The clinical procedure to prepare a tooth for a complete cast crown consists of the following steps:

Armamentarium

Occlusal guiding grooves

Occlusal reduction

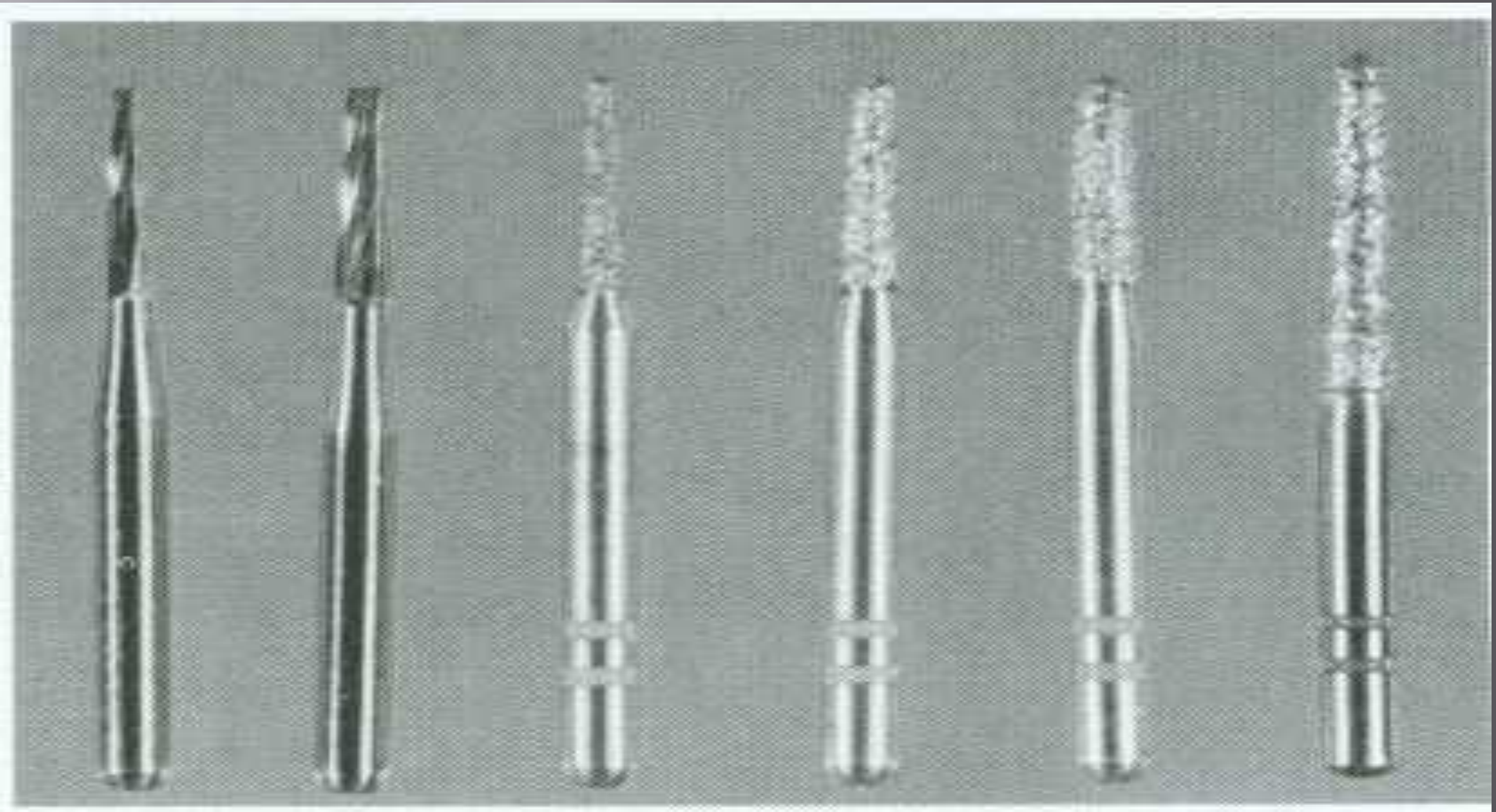
Axial alignment grooves

Axial reduction

Finishing and evaluation

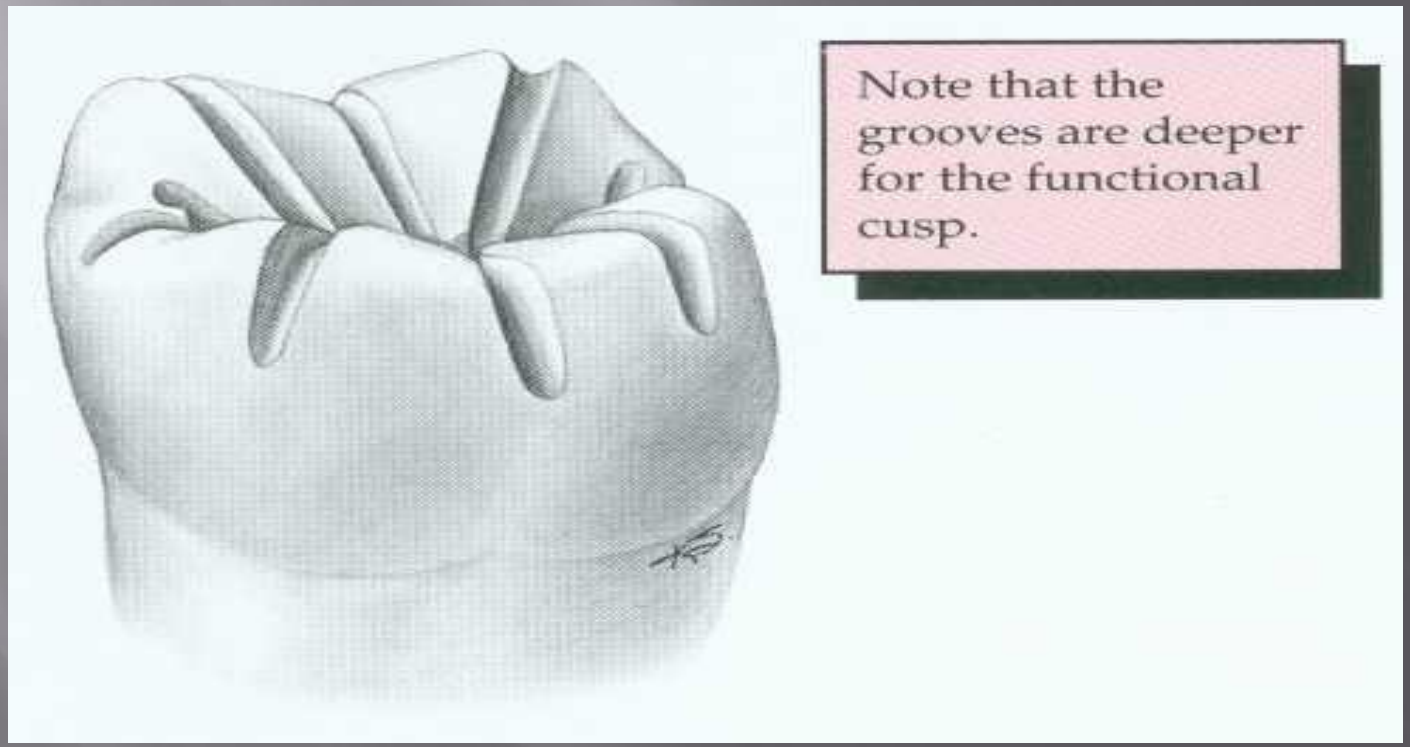
# Armamentarium for the complete cast crown preparation.

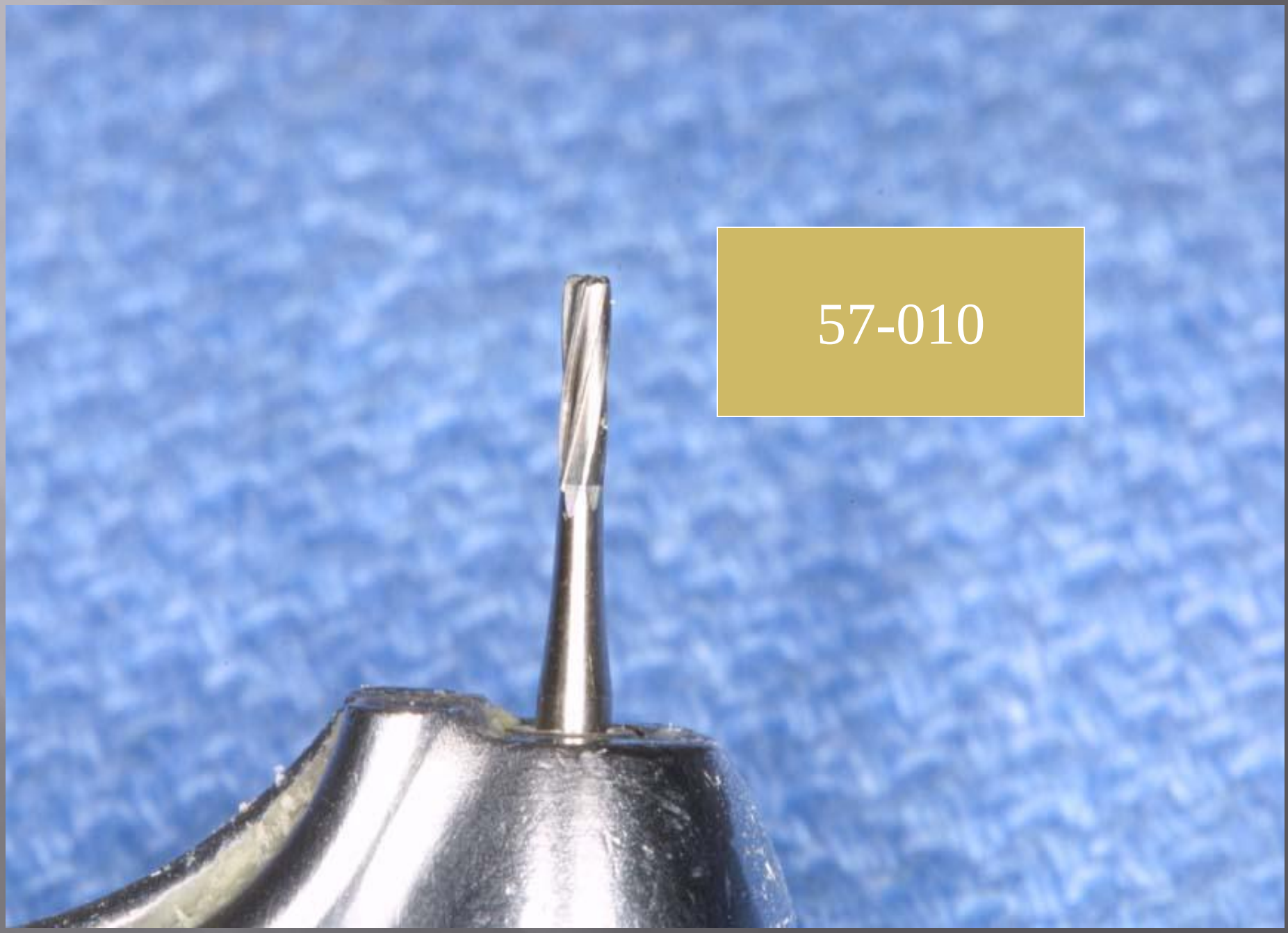
Armamentarium
Occlusal guiding grooves
Occlusal reduction
Axial alignment grooves
Axial reduction
Finishing and evaluation



# Guiding Grooves for Occlusal Reduction.

Armamentarium
Occlusal guiding grooves
Occlusal reduction
Axial alignment grooves
Axial reduction
Finishing and evaluation




57-010

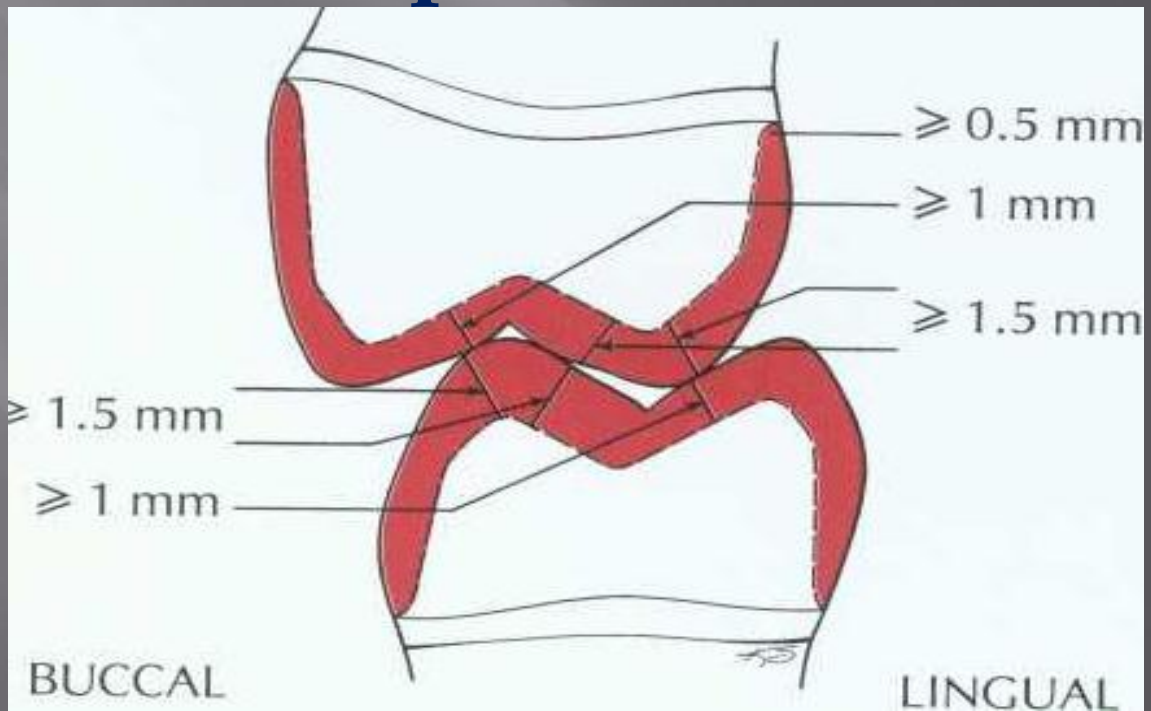
# PREPARATION

Armamentarium
Occlusal guiding grooves
Occlusal reduction
Axial alignment grooves
Axial reduction
Finishing and evaluation

## Occlusal reduction:

## Functional cusp 1.5 mm

## Nonfunctional cusp 1mm



# STEPS:

1- Place depth holes approximately 1mm depth in the center, mesial, and distal fossae and connect them so that the channel runs along the length of the central groove and extends into the mesial and distal marginal ridge.

# Occlusal reduction

2- Place guiding grooves in the buccal and lingual developmental grooves and in each triangular ridge extending from the cusp tip to the center of its base.

Instrument : Tapered carbide bur or diamond stone.

Depth : functional cusp 1.3 mm

nonfunctional cusp 0.8 mm

# Occlusal reduction

3- Place a functional cusp bevel to ensure adequate thickness of metal. It is placed at about 45 degrees to the long axis.

4- complete the occlusal reduction in two steps. Half of the occlusal surface is reduced first and maintain the other half as a reference. Then complete the other half.

Instrument : Narrow, round-end tapered diamond

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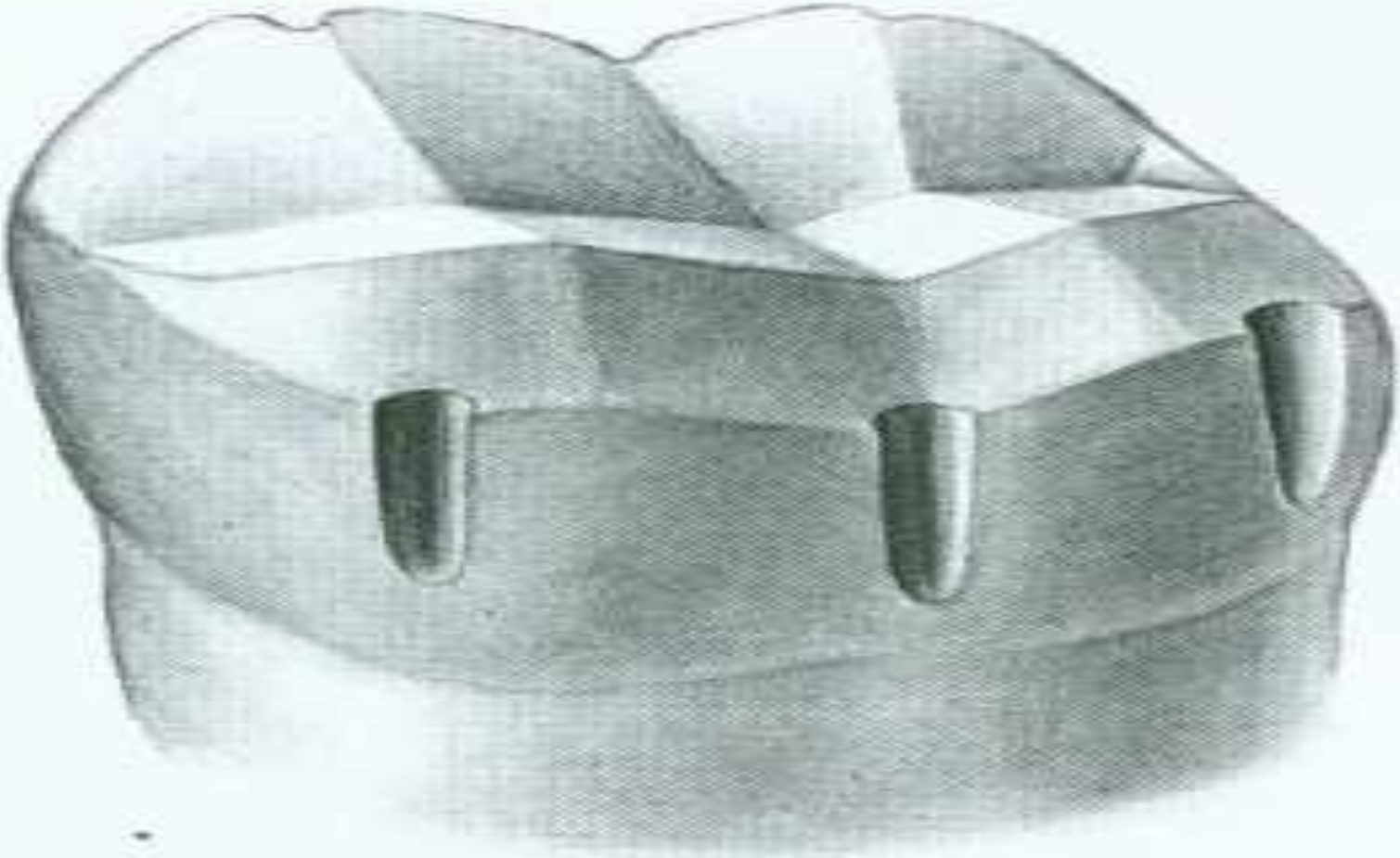
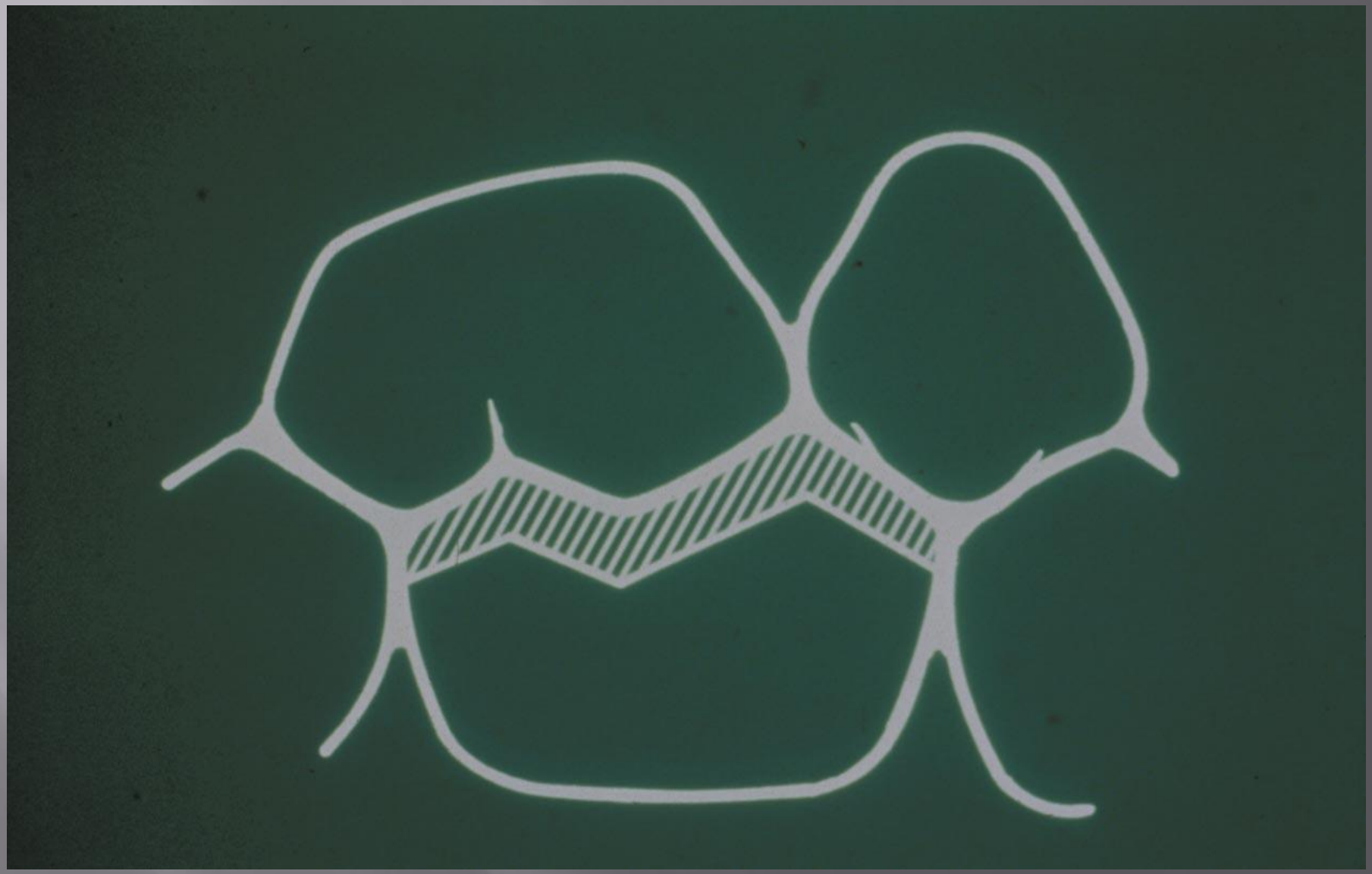
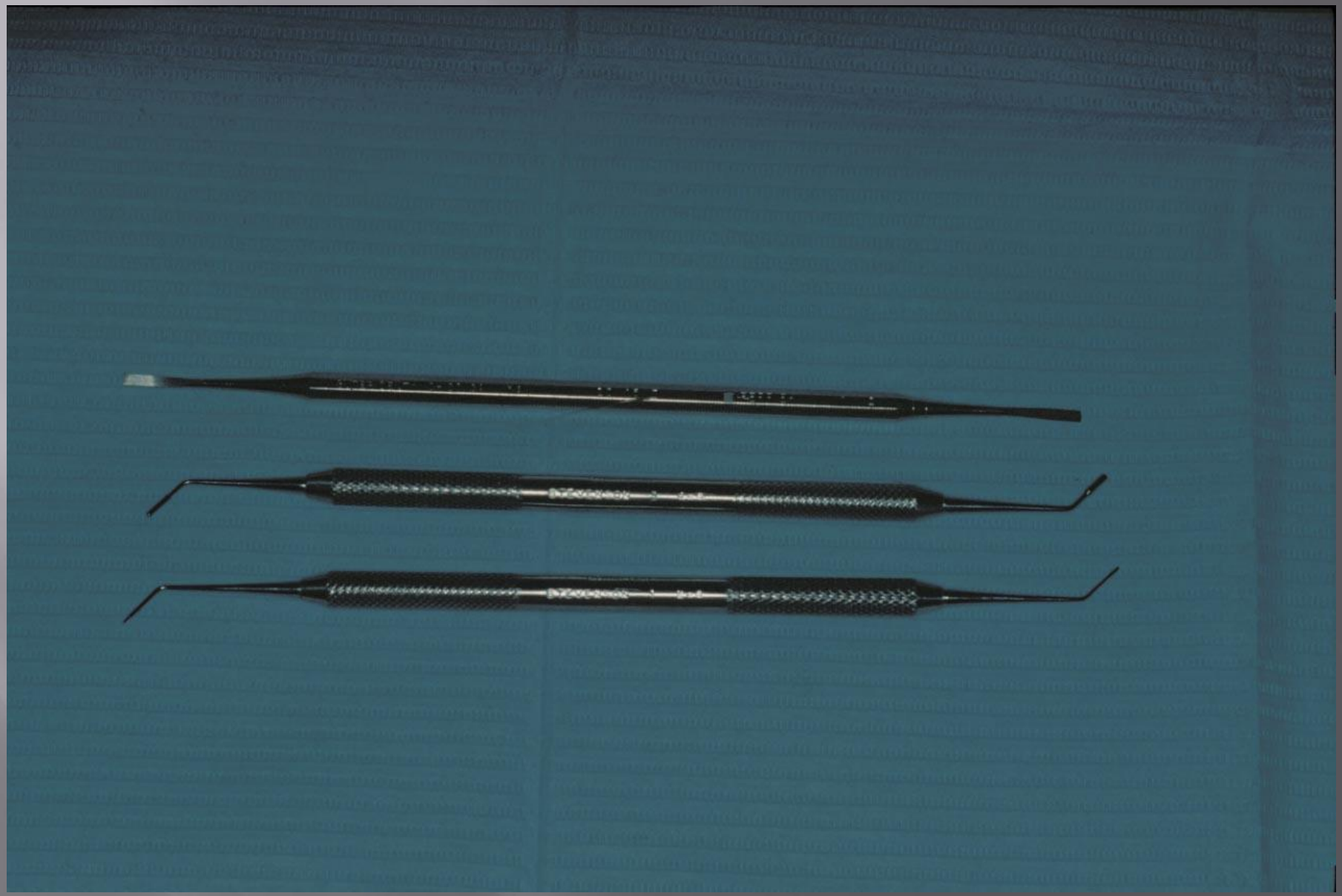
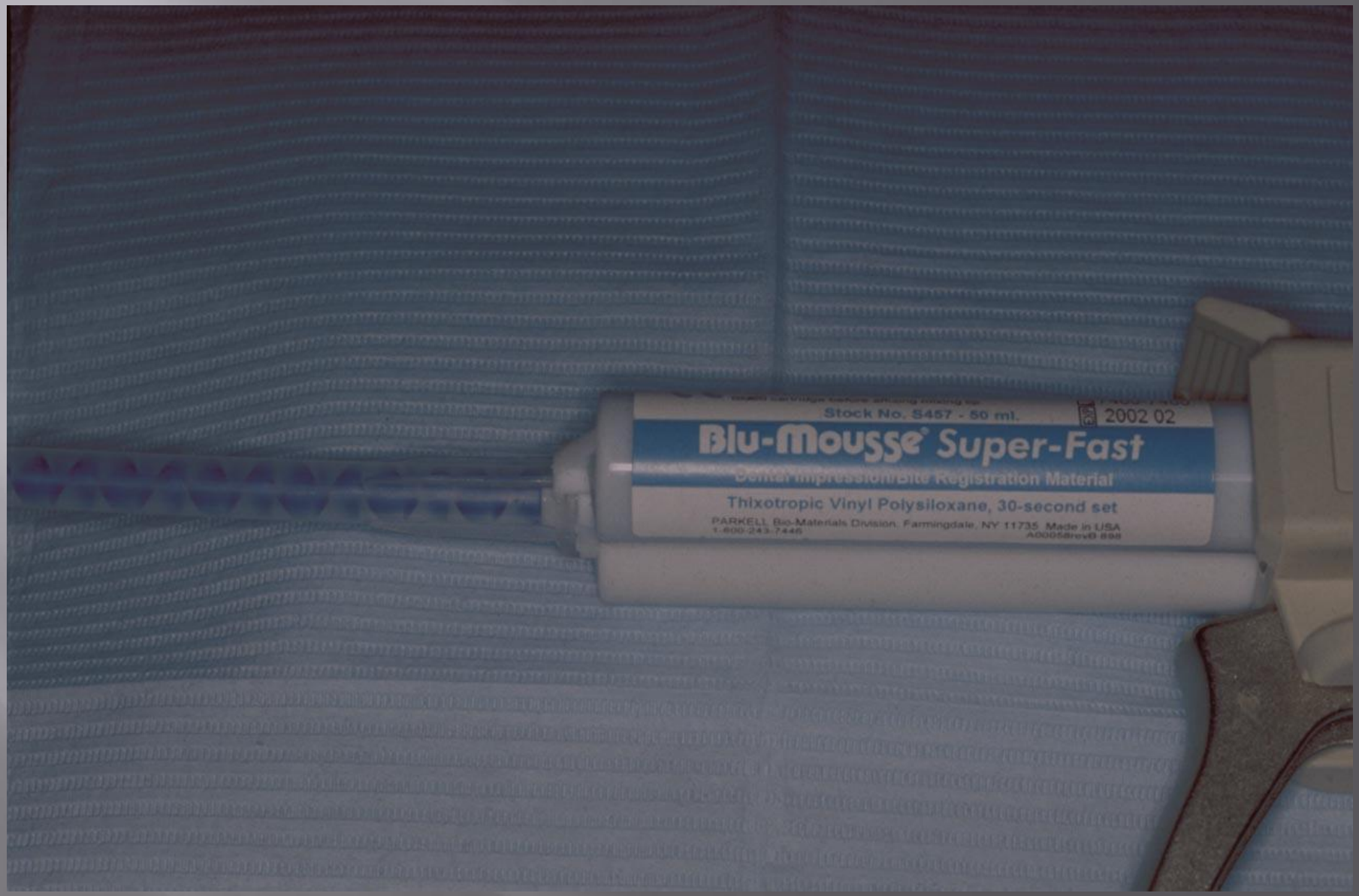


When placing these grooves, keep reduction to a minimum at the tip of the diamond.





Measure clearance with RGS 3
Instrument fits loosely


Stock No. S457 - 50 ml.
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Blu-Mousse Super-Fast
Thixotropic Vinyl Polysiloxane, 30-second set
PARKELL Bio-Materials Division, Farmingdale, NY 11735 Made in USA
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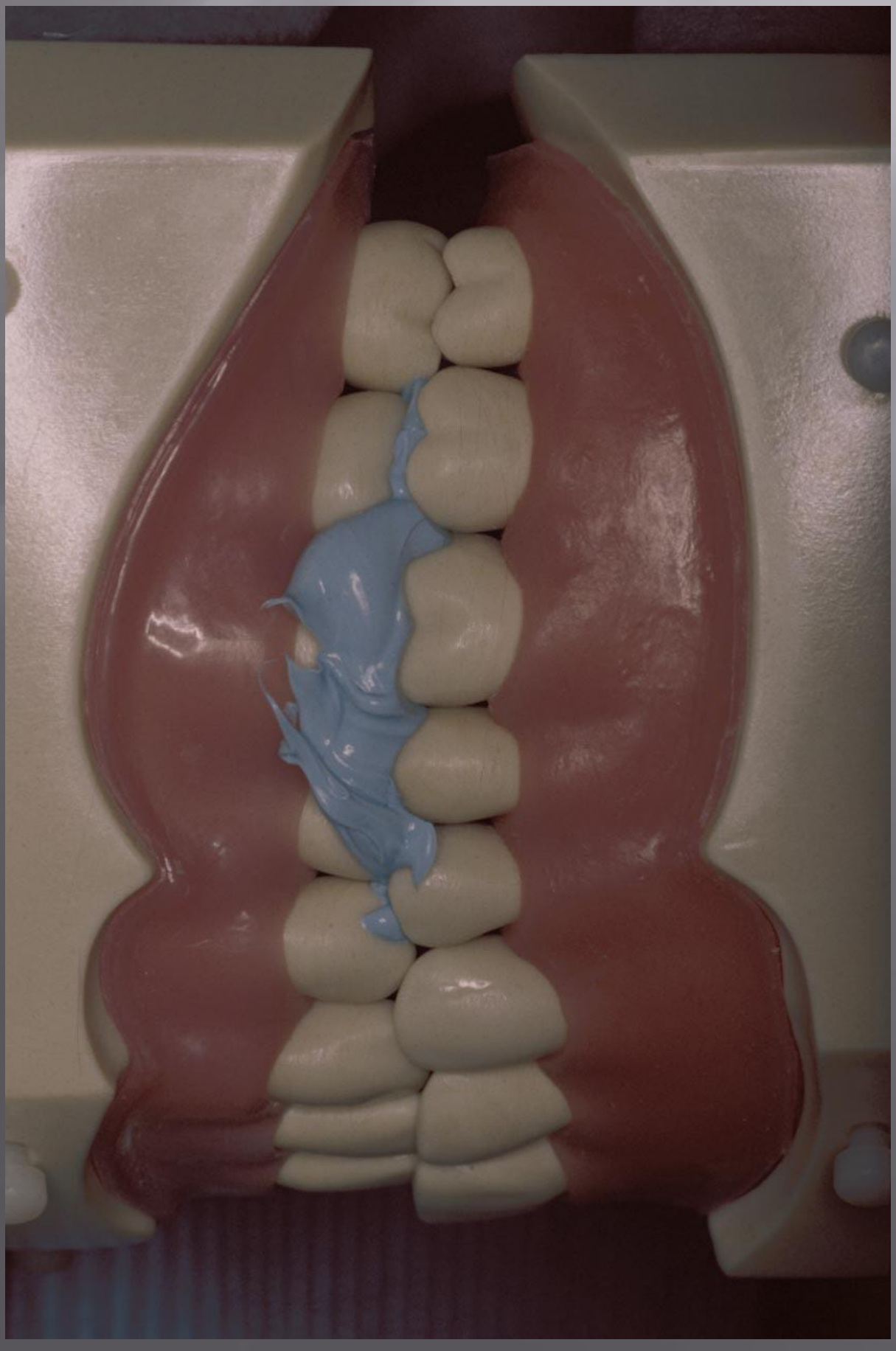
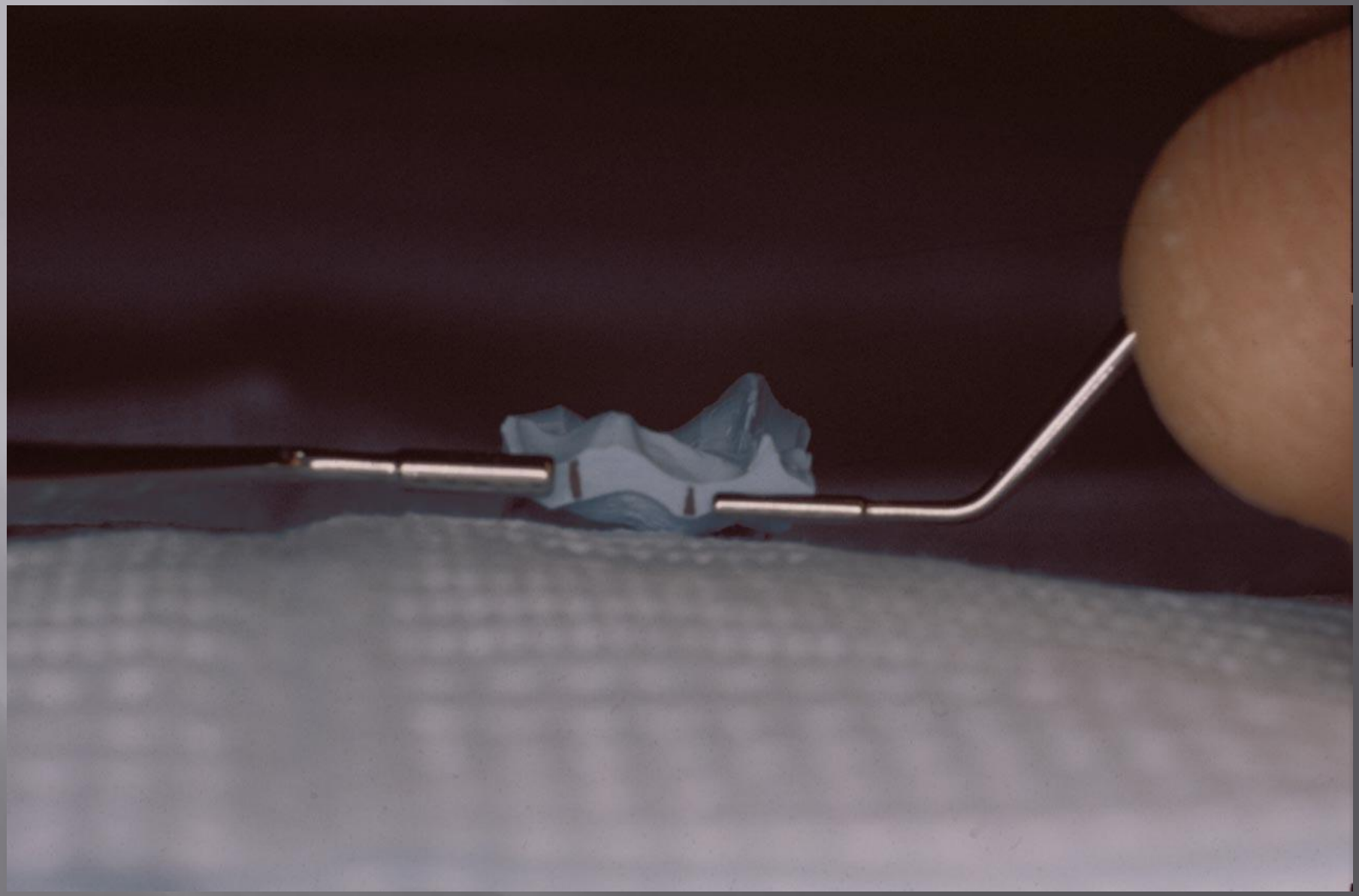




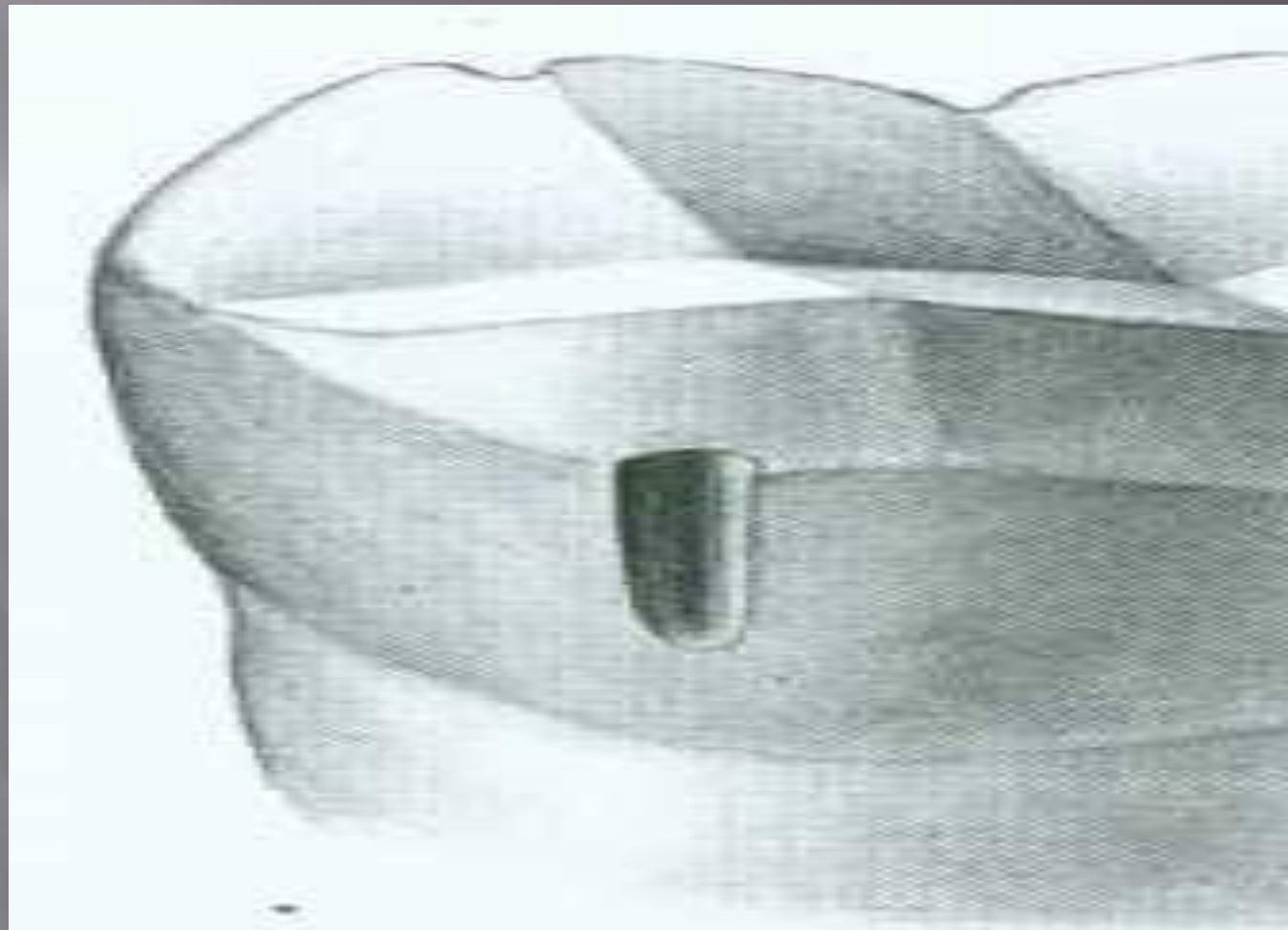
# EXTERNAL RETENTION FORM AND FINISH LINES

- Line of draw

-6-10 degree taper occlusally

-3 mm or longer axial wall

-.5 mm deep chamfer



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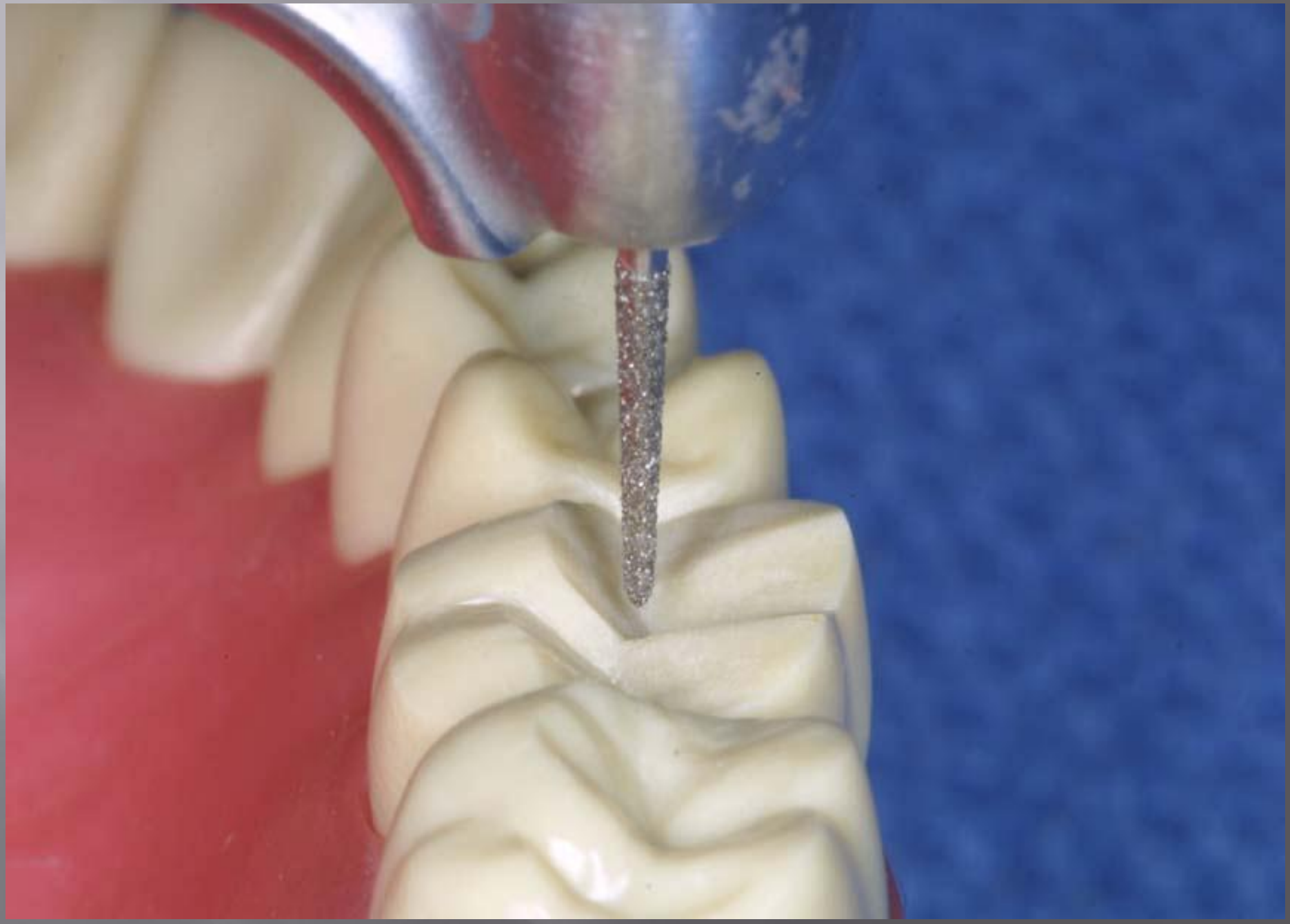
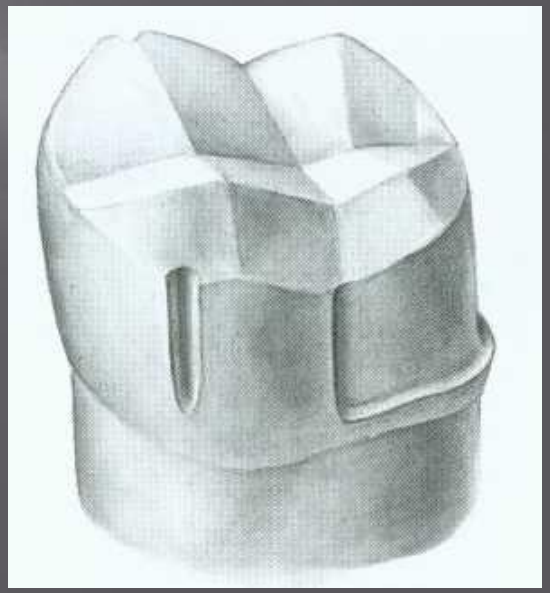


b) After placement of the alignment grooves

the remaining islands of tooth structure between the alignment grooves are removed while the chamfer margin is being placed



# INTERPROXIMAL REDUCTION

-Avoid adjacent tooth

-Break contact with adjacent tooth

-3 mm or greater wall length

-Taper and depth

# FINISHING BEVEL

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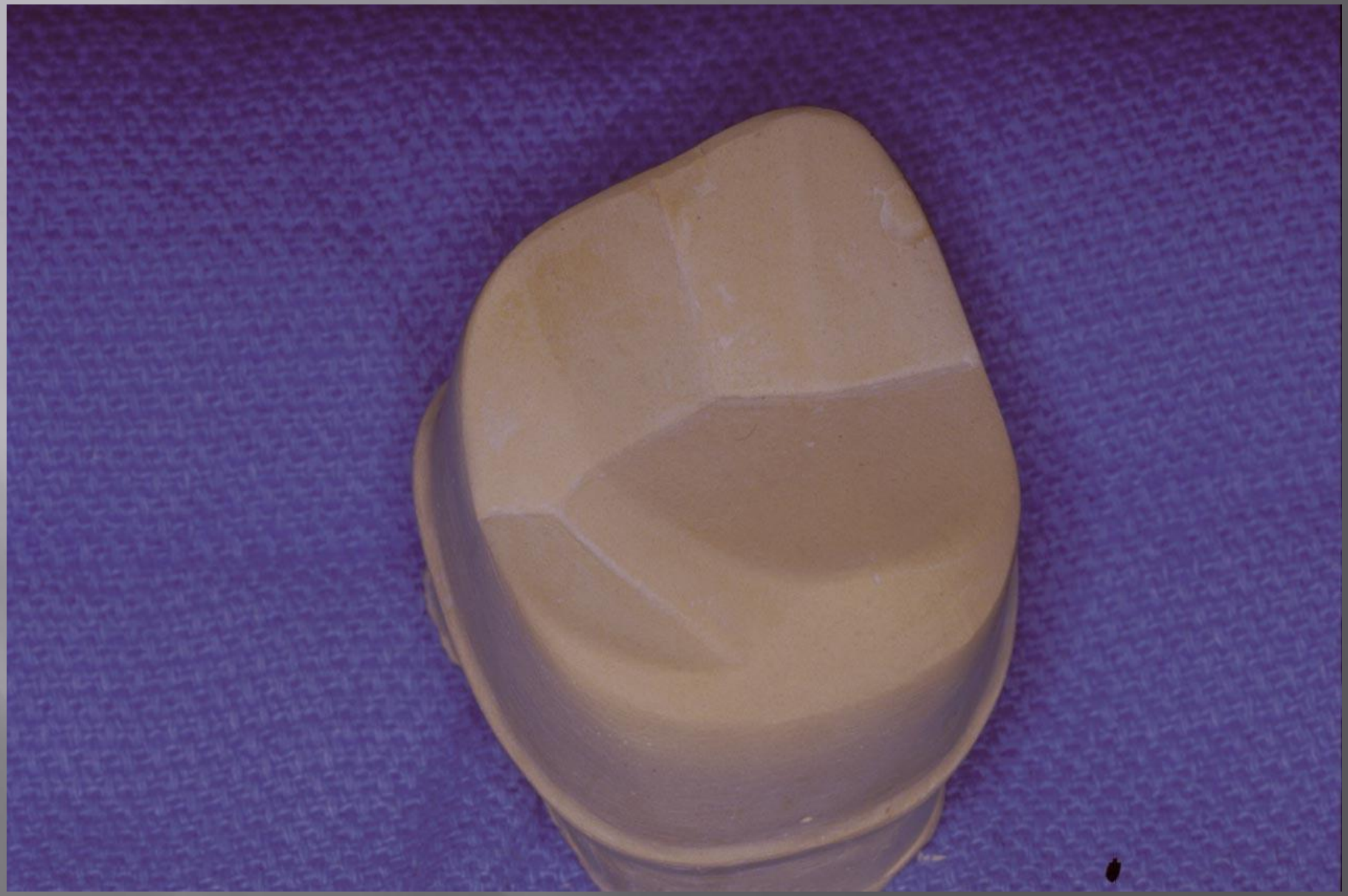
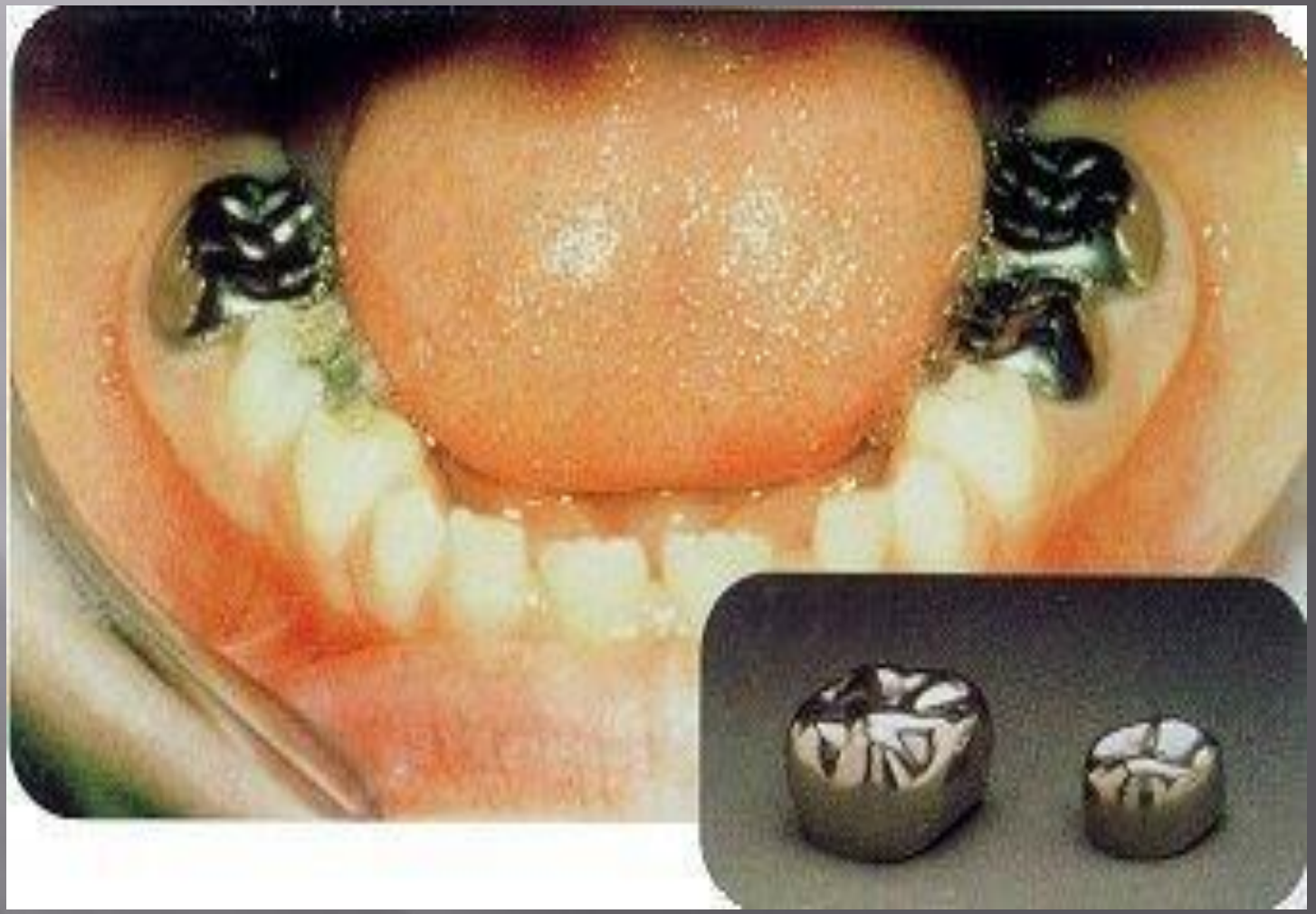


# Complete cast crown

# Single units



# Thank you